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REMARKS

The Invention.

The present invention provides: (1) a method for modifying the surface; (2) of an aromatic polyester resin, film, fiber, yarn or fabric; (3) comprising treating said polyester with a polyesterase enzyme derived from *Pseudomonas spp*; (4) the treatment occurring prior to the application of a finish and in the absence of surfactant for a time and under conditions sufficient to modify the properties of said polyester; and (5) wherein said modified properties of said treated polyester are selected from the group consisting of pilling, pilling prevention, weight, feel, appearance and luster properties of said polyester.

Specifically, the enzymes utilized in the inventive method are identified by their activity in two assays performed on long chain polyester polymers, not small molecule substrates.

Status of the Application.

Claims 1, 6, 7, 10-13, 18 and 21-23 are pending in the application. With this amendment, Claims 1, 12 and 21-23 have been amended, Claim 24 has been added and Claims 7, 10 and 11 have been deleted. Claims 1, 12 and 21-23 have been amended to recite that the polyesterase is derived from a *Pseudomonas spp*. Support for these amendments can be found throughout the application as filed. See, for example, Table 1. No new matter has been introduced by this amendment.

35 U.S.C. §102(b).

Claims 1, 6, 7, 10-13 and 21-23 stand rejected under 35 USC §102(b) as being anticipated by WO 97/27237 ('237) or WO 99/01604 ('604). Specifically, the Examiner asserts that the enzymes provided by the cited art are the same as presently claimed. Applicants respectfully traverse.

It is well-settled law that to anticipate a claim the prior art reference must contain each and every element within the four corners of the document. Thus, Applicants submit that there can be no anticipation unless all of the same elements of the invention are found within the four corners of a single reference. Applicants further submit that neither reference teaches each and every element of the claimed invention.

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The claims as currently presented are directed to a method of treating polyester resin, film, fiber, yarn or fabric with enzymes that give positive results in two assays, i.e., a PET UV and a MB assay, and that the treatment be prior to the application of a finish to the fiber. Thus, each reference must teach these two critical limitations.

Applicants note that the enzymes described by the cited art have not been tested by the two required assays of the presently claimed method. The '604 and '237 applications use enzymes that have an activity on di-ester or cyclic tri-mer molecules. They were not tested on polymers. However, Applicants did test the *Candida antarctica* Lipase B, *Candida rugosa* lipase, *Humicola lanuginosa* lipase, which were included in the art cited above, as well as numerous other enzymes. See Table 1, pages 18 – 20 of Applicants' specification. None of the three prior art enzymes tested by Applicant possessed the requisite activity to be encompassed by the current claims.

Applicants submit, based on the information above, that neither '237 nor '604 teaches the assays required by the instant invention. Furthermore, neither prior art application provides any teaching that the enzymes are suitable for the modification of polyester fibers prior to the application of a finish.

The '237 application describes the use of an assay based on the enzymes ability to hydrolyze terephthalic acid diethyl ester (ETE) and/or ethyleneglycol dibenzyl ester (BEB), i.e., small substrates. The small cyclic oligomers are obtained by organic solvent extraction from a polyester fabric. At no time do the enzymes under consideration in the '237 patent come in contact with the polyester fabric. Thus

Neither of these assays used in the '237 application is useful in the presently claimed invention. The ETE assay uses the same substrate and is very similar to the DET assay described in the present application. As noted in the present application in Table 1, the DET assay alone is not predictive of an enzyme's ability to hydrolyze the polymer, i.e., a long chain substrate. Furthermore, a person skilled in the art would know that the BEB assay is similar to the ETE assay and would yield comparable results. In fact, the assays, i.e., ETE and BEB, are used interchangeably in the '237 application. However, the two assays required by the instantly claimed invention use polymers, i.e., long chain esters, as the substrate. Additionally, the majority of the enzymes that are active on small ester substrates are not active on polymers as shown

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in our application. Thus, the '237 application does not teach the use of the appropriate assays for the identification of enzymes useful in the present inventive method. The '237 application also fails to teach the use of the enzymes in a treatment occurring prior to the application of a finish; at best, the '237 application teaches a process that takes place during the finishing step (see page 3, lines 28-30).

The Examiner asserts that the current claims can employ a detergent composition. Unlike the currently claimed process that uses a composition prior to finishing, the '237 application uses a detergent composition during the laundering process for finished garments. Thus, the '237 application is not an appropriate §102 reference.

The '604 application is even less appropriate as a §102 reference. It is directed to the identification of enzymes that hydrolyze cyclic oligomers extracted from polyester fabric. See Example 1 on page 9, lines 15 and 16, and Example 2 on page 11, lines 16-18. Thus, the assay used to identify the enzymes in the '604 application utilizes small molecules.

In addition, there is no teaching in the '604 application that the enzymes would be useful in a method of treating a polyester resin, film, fiber, yarn or fabric prior to the application of a finish. The method disclosed in the '604 application is for use by the end user of the polyester fabrics not the manufacturer. See page 2, first full paragraph. In addition, the '604 application states that the method of that invention comprised treating the fabric or garment with an ETE hydrolytic enzyme and/or a BEB hydrolytic enzyme and a detergent. (see Abstract and page 4, at line 4-6) Thus, the method is performed during the laundering of the polyester (i.e., after the application of the finish) and not during manufacture prior to the finishing step.

Anticipation by inherency

The Examiner has asserted that the enzymes disclosed in the cited references inherently possess enzymatic activity on the long chain esters. Although Applicants believe that they have provided sufficient reason as to cast doubt on the assertion (See Table 1 of the specification). We have shown data that this is not true ie; majority of enzymes having activity on small esters are not active on polymers. See Table 1 of the

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specification. Applicants also believe that since both of the cited references are missing more than a single element in the claim that would be covered by the inherent property that this rejection is moot.

A prior art reference may anticipate without disclosing a feature of the claimed invention if that missing characteristic is necessarily present, or inherent, in the single anticipating reference. See, e.g., EMI Group N. Am., Inc., v. Cypress Semiconductor Corp., 268 F.3d 1342, 1350 (Fed. Cir. 2001) ("A prior art reference anticipates a patent claim if the reference discloses, either expressly or inherently, all of the limitations of the claim." [Emphasis added.]

However, as described above, neither of the cited references possess all of the limitations either expressly or inherently.

Given the strict standards for anticipation, it is readily apparent that there is no anticipation of the claimed invention in view of '237 or '604. Withdrawal of the rejection is respectfully requested.

35 U.S.C. §103.

Claim 18 stands rejected under 35 USC 102(b) as anticipated by or in the alternative, under 35 USC 103(a) as obvious over WO 97/27237 ('237) or WO 99/01604 ('604), in light of GB 2307695 ('695).

Initially, Applicant notes that the test for non-obviousness articulated by the Court of Appeals for the Federal Circuit requires that the combination of the teachings of all or any of the references would have suggested the possibility of further improvement by combining such teachings. Thus, the test of whether it would have been obvious to select specific teachings and combine them must still be met by identification of some suggestion, teaching, or motivation in the prior art, arising from what the prior art would have taught a person of ordinary skill in the field of the invention. See In re Dance, 160 F.3d 1339, 48 USPQ2d 1635 *quoting In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988), and In re Vaeck, 20 USPQ2d 1439 (Fed. Cir. 1991).

Claim 18 depends from Claim 1 and therefore all the limitations of Claim 1 are read into Claim 18. Thus, the arguments presented above for the '237 and '604 applications finds relevance here as well. The addition of the '695 application fails to

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cure the deficiencies of the '237 and '604 applications.

The '695 application is directed to a laundry detergent composition (see Abstract, Definition of the Invention and the specification and claims as a whole) and, thus, would not be applicable to treating a polyester resin, film, fiber, yarn or fabric prior to the application of a finish. Thus, in contrast to the present invention which finds use in the manufacture of polyester articles, the '695 application finds use in the cleaning of soiled polyester fabrics and garments. One skilled in the art would not look to the '695 application for direction in a process that occurs prior to finishing.

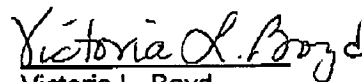
The Examiner asserts that "all claim 18 requires is that the treatment occur in the presence of polypropylene glycol or glycerol which ['695] does teach and is of record." See page 3 of the Office Action. Applicants respectfully disagree. Applicants believe the Examiner has inaccurately characterized Claim 18 because, as noted above, it contains all the limitations of Claim 1 and not solely to the presence of polypropylene glycol or glycerol during treatment. A person skilled in the art would not look to '695 to provide instructions on the treatment of polyester as claimed in Claim 1 in the presence of polypropylene glycol or glycerol.

In summary, there is no suggestion that a person skilled in the art would combine either the '237 or the '604 application with the '695 application. Applicant respectfully requests withdrawal of this rejection.

CONCLUSION

In light of the above amendments, as well as the remarks, the Applicants believe the pending claims are in condition for allowance and issuance of a formal Notice of Allowance at an early date is respectfully requested. If a telephone conference would expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (650) 846-7615.

Respectfully submitted,



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